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and subdermal tissues. The reflected signal is received by a signal receiver 54 and transmitted through receiving wires to a chip 50 where the received signal is processed.

IN THE CLAIMS:

Please cancel claims 4, 30, 33 and 34. Please replace claims 1, 11, 16, 20, 23, 28 and 35 with the following replacement claims, respectively:

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1. (Amended) A computer-implemented method for biometric authentication, said method comprising:

reading a first unique, hemodynamic waveform of an individual;
analyzing said waveform to identify unique traits;
reading a second unique, internal physiological trait of said individual; and
authenticating the identity of said individual if both said waveform and said physiological trait correspond with previously enrolled traits recorded for said individual.

4. (Cancel)

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11. (Amended) A method comprising:

reading a first live internal biological identifier of an individual, said first live internal biological identifier being a heartbeat waveform measured by reflecting light off of the subdermal layers of skin tissue on said individual;

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analyzing said waveform to identify unique traits;
reading a second live internal biological identifier of said individual, said second live
internal biological identifier comprising bone density; and
authenticating the identity of said individual if both of said biological identifiers correspond
with previously enrolled biological identifiers taken for said individual.

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16. (Amended) A method comprising:
presenting an individual's live body tissue to an authenticating device for the capturing of
a first unique, hemodynamic waveform of said individual;
analyzing said waveform to identify unique features;
providing a second unique, internal physiological identifier of said individual to said
authentication device;
authenticating said second physiological identifier by comparing the unique features with
those recorded for that individual;
upon authentication by said device, operating said device to perform functions previously
inaccessible to unauthorized individuals, said authentication taking place upon the
matching of both of said physiological identifiers with previously enrolled
physiological identifiers taken for said individual.

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20. (Amended) A computer software program comprising instructions for:
reading a first unique, physiological hemodynamic waveform of an individual;
analyzing said waveform for features unique to said individual;
reading a second unique, internal physiological trait of said individual; and

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authenticating the identity of said individual if both of said physiological traits correspond with previously enrolled physiological traits taken for said individual.

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23. (Amended) The signal of claim 20 wherein said second unique, internal physiological trait is measured by reflecting light off of the skin of said individual.

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28. (Amended) A computer-readable medium comprising instructions for:
reading a unique hemodynamic waveform of an individual;
analyzing said waveform to identify unique traits;
reading a second unique, internal physiological identifier of said individual; and
authenticating the identity of said individual if both said waveform and said physiological identifier correspond with previously enrolled identifiers recorded for said individual.

30. (Cancel)

33. (Cancel)

34. (Cancel)

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35. (Amended) A layered biometric authentication system comprising:
a portable computerized device having an infrared emitter and detector operably connected to a single computer chip;

means for capturing a first unique hemodynamic waveform of an individual, said means being located on said portable device and operably connected to said computer chip, said waveform being measured by reflecting light off of the subdermal layers of skin tissue on said individual;

means for analyzing said waveform to identify unique traits;

means for capturing a second internal physiological identifier of said individual, said means for reading the second physiological identifier being located on said portable device and operably connected to said computer chip;

means for verifying physiological activity, said verifying means being operably connected to said computer chip; and

means for authenticating the identity of said individual if both said waveform and said physiological identifier correspond with previously enrolled identifiers recorded for said individual, said means for authenticating weighting some quantitative features of said identifiers more than other quantitative features of said identifiers.